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WHAT IS CLAIMED IS:

1. A fluid injection apparatus adapted to inject fluid, comprising:  
an input device;  
a catheter in fluid communication with the input device; and  
an improved visualization device operatively associated with  
one of the input device and catheter and adapted to increase the speed with  
which fluid may be injected.
2. The fluid injection apparatus of claim 1, wherein the input device  
is a syringe.
3. The fluid injection apparatus of claim 2, wherein the syringe is  
manually operated.
4. The fluid injection apparatus of claim 1, wherein the improved  
visualization device is a heater adapted to increase the temperature of the  
fluid.
5. The fluid injection apparatus of claim 1, wherein the improved  
visualization device is an expandable member proximate a distal end of the  
catheter.

2 6. The fluid injection apparatus of claim 1, further including a  
4 manifold and a fluid line, the manifold having first and second ends and a  
manifold, the fluid line being connected to one of the input ports of the  
manifold.

2 7. The fluid injection apparatus of claim 6, wherein the catheter is  
connected to the second end of the manifold.

2 8. The fluid injection apparatus of claim 7, wherein the fluid is  
radiopaque contrast.

2 9. The fluid injection apparatus of claim 7, wherein the fluid line  
includes a valve.

2 10. The fluid injection apparatus of claim 4, wherein the heater is  
positioned proximate the catheter.

2 11. The fluid injection apparatus of claim 4, wherein the heater is an  
electric heating coil.

2 12. The manually operated fluid injection apparatus of claim 4,  
wherein the heater employs a form of heating selected from the group of  
heating forms including radiant, convective, and conductive.

13. The fluid injection apparatus of claim 4, wherein the heater is  
integrated into one of the syringe, fluid line, manifold, and catheter.

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2 14. A method of manually injecting fluid, comprising the steps of:  
4 retracting a plunger from a syringe cylinder and drawing fluid  
into the cylinder;  
6 depressing the plunger into the cylinder forcing the fluid out of  
an outlet of the cylinder;  
increasing the speed with which the fluid may be injected; and  
injecting the fluid into a patient.

2 15. The method of manually injecting fluid of claim 14, wherein the  
increasing step includes the step of reducing the viscosity of the fluid.

2 16. The method of manually injecting fluid of claim 15, wherein the  
viscosity of the fluid is reduced by heating the fluid.

4 17. The method of manually injecting fluid of claim 16, wherein the  
fluid is injected into the patient with a catheter, and wherein the heating step  
occurs proximate the catheter.

2 18. The method of manually injecting fluid of claim 14, wherein the  
increasing step is performed by constricting blood flow proximate an area of  
injection.

2            19.     The method of manually injecting fluid of claim 18, wherein the fluid is injected with a catheter, and wherein the blood flow is constricted by enlarging the size of the catheter.

20. A manually operated fluid injection system, comprising:  
a syringe having a movable plunger;  
a manifold having a plurality of input ports and first and second  
ends, the syringe being connected to the first end of the manifold;  
a fluid line having first and second ends, the first end of the fluid  
line being connected to one of the plurality of input ports;  
a catheter connected to the second end of the catheter;  
a source of fluid in communication with the fluid line; and  
a heater operatively associated with one of the syringe,  
manifold, fluid line, catheter and source of fluid.

21. The manually operated fluid injection system of claim 20,  
wherein the fluid is radiopaque contrast.

22. The manually operated fluid injection system of claim 20,  
wherein a valve is interposed in the fluid line for controlling fluid flow  
therethrough.

23. The manually operated fluid injection system of claim 20,  
wherein the heater is integrated with one of the syringe, manifold, fluid line,  
and catheter.

24. A manually operated fluid injection system, comprising:  
a syringe having a movable plunger;  
a manifold having a plurality of input ports and first and second  
ends, the syringe being connected to the first end of the manifold;  
a fluid line having first and second ends, the first end of the fluid  
line being connected to one of the plurality of input ports;  
a catheter connected to the second end of the catheter;  
a source of fluid in communication with the fluid line; and  
an expandable ring associated with the catheter, the ring being  
expandable after catheter insertion and prior to injection to constrict blood  
flow.

25. The manually operated fluid injection system of claim 24,  
wherein the fluid is radiopaque contrast.

26. The manually operated fluid injection system of claim 24,  
wherein a valve is interposed in the fluid line for controlling fluid flow  
therethrough.



27. A manually operated fluid injection system, comprising:  
2 a manipulable input device; and  
4 a heater associated with the input device and adapted to  
increase the temperature of fluid prior to injection.

28. The manually operated fluid injection system of claim 27,  
2 wherein the fluid is radiopaque contrast.

29. The manually operated fluid injection system of claim 27,  
2 wherein the heater is integrated into the input device.

30. The manually operated fluid injection system of claim 27,  
2 wherein the heater is an electric coil.

31. The manually operated fluid injection system of claim 27,  
2 wherein the heater employs a form of heating selected from the group of  
heating forms including radiant, convective and conductive.

32. A manually operated fluid injection system, comprising:

2

a manipulable input device;

a catheter connected to the input device;

4

an expandable member associated with the catheter and

adapted to expand after the catheter is inserted into a patient to restrict blood  
flow during injection.

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